

B'cont  
a resin package covering the ferrule so that an end of the ferrule protrudes from the resin package, said photodetector having a size smaller than an area of said slope end surface.

B<sup>2</sup>  
6. (ONCE AMENDED) An optical module, comprising:  
a ferrule having a slope end surface and supporting an optical fiber extended therethrough; and  
a photodetector mounted on the slope end surface, and optically coupled directly with the optical fiber, said photodetector having a size smaller than an area of said slope end surface.

Please ADD the following NEW claim:

B<sup>3</sup>  
7. (NEW) The optical module as claimed in claim 1, wherein said photodetector is adhered on said slope end surface.

#### REMARKS

Reconsideration and allowance of the above-referenced application are respectfully requested.

#### **I. STATUS OF THE CLAIMS**

Claims 1 and 6 are amended herein.

New claim 7 is added.

In view of the above, it is respectfully submitted that claims 1-7 are currently pending and under consideration.

#### **II. REJECTION OF CLAIMS 1-6 UNDER 35 U.S.C. § 103(A) AS BEING UNPATENTABLE OVER MESAK ET AL. (US 6,217,231) IN VIEW OF SERIZAWA (US 6,443,630)**

The present invention as recited, for example, in claim 1 as amended herein, relates to an optical module comprising a photodetector "having a size smaller than an area of said slope end surface."

In Figs. 23C and 23D, Mesaki discloses a ferrule having a slope end surface. However, as stated by the Examiner, Mesaki does not teach the mounting of a photodetector on a slope end surface. Thus, Mesaki does not teach or suggest the features as recited in claim 1 of the

present application.

Serizawa discloses an optical connect assembly. In Fig. 3, Serizawa discloses reception and transmission modules 26 and 27 mounted to the holder 36 and coupled to the light transmission member 35.

However, Serizawa fails to teach or suggest a photodetector having a size which is smaller than the slope end surface of an optical module as recited in claim 1 of the present application. In fact, the reception and transmission modules 26 and 27 of Serizawa appear to cover the entire surface of the holder 36. Therefore, it would appear that the reception and transmission modules 26 and 27 of Serizawa, if combined with the teachings of Mesaki, would cover the entire slope end surface of the optical module as taught by Mesaki and thus, would differ from the features recited in claim 1 of the present application.

Therefore, Mesaki and Serizawa, either alone or in combination, do not teach or suggest the features recited in claim 1 of the present application.

Claims 2-5 depend from independent claim 1. Therefore, for at least the reasons that claim 1 distinguishes over the cited prior art, it is respectfully submitted that claims 2-5 also distinguish over the cited prior art.

Independent claim 6 also recites a photodetector "having a size smaller than an area of said slope end surface," which distinguishes over the teachings of Mesaki and Serizawa.

In view of the above, it is respectfully submitted that the rejection is overcome.

### **III. NEW CLAIM**

New claim 7 recites that the photodetector "is adhered on said slope end surface," which distinguishes over the teachings of Mesaki and Serizawa.

In view of the above, it is respectfully submitted that claim 7 patentably distinguishes over the cited prior art.

### **IV. CONCLUSION**

In view of the foregoing amendments and remarks, it is respectfully submitted that each of the claims patentably distinguishes over the prior art, and therefore defines allowable subject matter. A prompt and favorable reconsideration of the rejection along with an indication of allowability of all pending claims are therefore respectfully requested.

If there are any additional fees associated with the filing of this Amendment, please charge the same to our Deposit Account No. 19-3935.

Respectfully submitted,

STAAS & HALSEY LLP

Date: April 4, 2003

By: Derrick L. Fields  
Derrick L. Fields  
Registration No. 50,133

700 Eleventh Street, NW, Suite 500  
Washington, D.C. 20001  
(202) 434-1500

**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

**IN THE CLAIMS:**

Please AMEND the claims in accordance with the following:

1. (TWICE AMENDED) An optical module comprising:  
a ferrule having a slope end surface and supporting an optical fiber penetrated therethrough;  
a photodetector mounted on the slope end surface, and optically coupled directly with the optical fiber;  
a module substrate supporting the ferrule; and  
a resin package covering the ferrule so that an end of the ferrule protrudes from the resin package, said photodetector having a size smaller than an area of said slope end surface.
2. (AS ONCE AMENDED) The optical module as claimed in claim 1, further comprising:  
a supporting base mounted on the module substrate, the supporting base supporting the ferrule.
3. (AS ONCE AMENDED) The optical module as claimed in claim 1, further comprising:  
electronic parts mounted on the module substrate.
4. (AS ONCE AMENDED) The optical module as claimed in claim 1, wherein the resin package comprises:  
engagement protrusions that are to be engaged with an optical connector.
5. (AS ONCE AMENDED) The optical module as claimed in claim 1, wherein the resin package comprises:  
engagement protrusions which are to be engaged with an optical connector, and the engagement protrusions extend along side surfaces of the resin package.
6. (ONCE AMENDED) An optical module, comprising:  
a ferrule having a slope end surface and supporting an optical fiber extended therethrough; and

a photodetector mounted on the slope end surface, and optically coupled directly with the optical fiber, said photodetector having a size smaller than an area of said slope end surface.

**Please ADD the following NEW claim:**

7. (NEW) An optical module as claimed in claim 1, wherein said photodetector is adhered on said slope end surface.